Case Report

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Patent Vitellointestinal Duct

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Abstract

As the development progress communication between intra-embryonic gut and yolk sac narrows into a tube called vitellointestinal duct which becomes obliterated by 7th week. A wide variety of anomalies may occur as a result of the vitellointestinal duct failing to obliterate completely. Meckels diverticulum is the commonest while complete patent vitellointestinal duct is rarest malformation. We are presenting a case of patent vitellointestinal duct with umbilical fecal fistula.

Keywords: Patent Vitellointestinal Duct; Umbilical Granuloma; Diverticulum is.

Introduction

Patent Vitellointestinal duct (PVID) is one of the complications of incomplete obliteration of the vitelline duct with incidence varying from 1 in 5000 to 8000 live births. Failure of fusion of Vitellointestinal duct partially or completely gives a wide variety of anomalies. These include Meckels diverticulum, patent vitelline duct, fibrous band, umbilical sinus tract, umbilical polyp and cyst. In about 2 to 4 % of humans this duct persists and gives rise Meckels diverticulum which is the commonest and complete patency of Vitellointestinal duct which is the rarest anomaly [1, 2].

During third week of intrauterine life, midgut develops communication with the yolk sac. As development proceeds the communication becomes narrow called vitellointestinal duct (VID). During 6th week the duct is completely obliterated with the establishment of placental nutrition. Anomalies occur when all or part of the duct remains patent and accordingly presenting features and findings differ in individuals. Here we present a case of patent vitellointestinal duct with umbilical faecal fistula.

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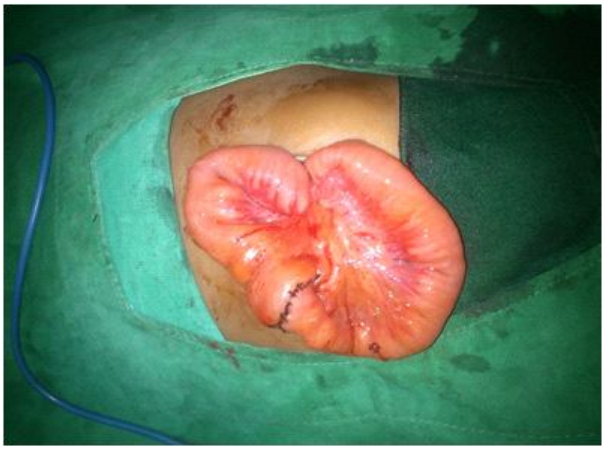
Case Report

One and half month old male infant presented with reddish mass at umbilicus with occasional yellowish green discharge from it. Baby was feeding well and thriving well. There was no history of abdominal distension or vomiting. Baby was passing urine and stools normally. On examination infant was comfortable with normal vitals. Abdomen was soft with no distension. On careful local examination, there was reddish mass of 1.5cm into1cm with scab overlying and small mucosa lined opening of size 2mm into 2mm at 2 O' clock position. Under all aseptic precautions infant feeding tube no 6 was negotiated through opening. It was easily negotiable up to 6cm, yellowish green faecal material coming out was noted which was almost confirmatory of communication between umbilicus and intestine suggestive of PVID. Ultrasonography also documented PVID and there was no communication between bladder and umbilicus.

Under intravenous sedation and caudal anesthesia local exploration was done . Tan and Bianchi incision was taken. There was evidence of very small communication between the granuloma like mass and Y shaped small intestinal segment (terminal Ileum). Small intestine segment proximal to patent duct was marginally dilated and distal segment was narrow. Intestinal segment was dilated just below duct on mesenteric side also. Keeping in mind

possibility of presence of ectopic pancreatic and or gastric tissue at the base of VID, end to end resection anastomosis of terminal ileum keeping margin of 1.5 was done. Anastomosis was done in two layers and wound closed in layers. Histopathological examination did not reveal any ectopic tissue. Infant did well postoperatively and was discharged on 8th postoperative day.

Fig. 1: Showing Patent Vitellointestinal duct



Discussion

During the 3rd week of intrauterine life, primitive gut communicates with the yolk sac. As the development proceeds the communication becomes tubular and is called as vitellointestinal duct. Between the 5th and 9th week of gestation, the vitelline duct [3, 4, 5] becomes obliterated with the establishment of placental nutrition. Persistant of a part or all the duct give rise to various congenital anomalies like Meckels diverticulum, patent vitellineduct, umbilical fistula, umbilical sinus and umbilical polyp [6, 7].

On the basis of embryonic anatomic relationship or the part of duct patent simplified classification is described [8]. Type 1 entire duct is patent. Type 2- only one end is patent and type 3 only the mid portion is patent. Children may or may not be symptomatic depending up on type of malformation. Meckels diverticulum is the commonest anomaly while persistent vitellointestinal duct is the rarest anomaly [9].

Meckels diverticulum affects about 1to 4% of population and is asymptomatic in most of the cases. It may cause complications when it contains ectopic tissue (mostly gastric or pancreatic) like intestinal bleeding, obstruction, intussusception, diverticulus, perforation which need surgical treatment [10, 11].

When distal end of vitellointestinal duct remains patent it results in umbilical polyp. Accumulation of mucus in a portion of vitellointestinal duct results in the formation of a cyst. This may be attached to the intestine or umbilicus with fibrous band. Treatment is excision of polyp or cyst. When whole vitellointestinal duct remain patent it produces fistula between umbilicus and ileum. It presents itself with continuous or intermittent discharge of mucus or meconium in first few days of life. Partial or total prolapse of intestine may occur if defect is large. This may cause intussusception which may lead to obstruction, strangulation or gangrene of prolapsed segment.

In our case infant was referred as case of umbilical granuloma by primary care doctor. On examination communication was confirmed. So careful examination should be performed for not to miss communication with intestine.

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